Project Title

NCIS Nurse-Led Vital Signs Monitoring

Project Lead and Members

Project lead & members: Dr Samuel Ow, Sharmila Kasinathan, Dr Dora Lang, Dr Lui Pak Ling, Dr Tham Sai Meng, Lim Bee Kuan, Rosa Anne Pepito Yap, Felma Bacabac Montanez, Pierre Yim

Organisation(s) Involved

National University Hospital

Project Period

Start date: Mar 2017

Completed date: Sept 2018

Lessons Learnt

1. Questioning routine clinical practices which are not evidence-based, can lead to improvement in processes
2. Engaging Key Stakeholders is important in ensuring support for implementation of initiatives
3. Regular review of results and feedback to Key Stakeholders will instil greater confidence and positive behavioural change
4. Better communications between members of the healthcare team help to change perceived expectations and facilitate empowerment of members to execute change

Project Category

Clinical Improvement, Quality Improvement, Productivity

Keywords

Clinical Improvement, Quality Improvement, Quality Improvement Methodology, Productivity, Process Improvement, , Nursing, Haematology-Oncology, Inpatient Management, Vital Signs Monitoring, Patient Centred Care, Staff Empowerment, Manpower Saving, Time Saving, National University Cancer Institute, Low Risk Patients, Safe De-escalation, Fishbone Diagram, Pareto Chart, Consensus Criteria, Well Defined Protocol, Effective Communication

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NCIS Nurse-Led Vital Signs Monitoring

| Organisation	National University Cancer Institute, Singapore (NCIS)
Team Leaders	Dr Samuel Ow (Medical lead); NC Sharmila Kasinathan (Nursing Lead)
Team Members	Dr Dora Lang, Dr Lui Pak Ling, Dr Tham Sai Meng, ANC Lim Bee Kuan, ANC Rose Anne Pepito Yap, SSN Felma Bacabac Montanez, SSN Pierre Yim

Defining the Problem and Goal

- Routine frequent vital signs monitoring (VSM) is often cited by Haematology-Oncology nurses as an area which impacts time and resources for other aspects of patient care. It is also disruptive to patients, especially those requiring palliative care.
- Published literature has shown that VSM can be de-escalated safely in Low Risk (LR) patients without adverse clinical outcome.
- Retrospective review of admissions to the Department of Haematology-Oncology at the National University Cancer Institute, Singapore (NCIS) from July-September 2016 showed 30% potentially did not require frequent VSM.
- Survey of Haematology-Oncology doctors (n=36) revealed 100% were comfortable with less frequent VSM ($\leq$ 8-hourly).
- We aim to reduce VSM of Low Risk Haematology-Oncology patients in NCIS safely by 50% using a Nurse-led approach.
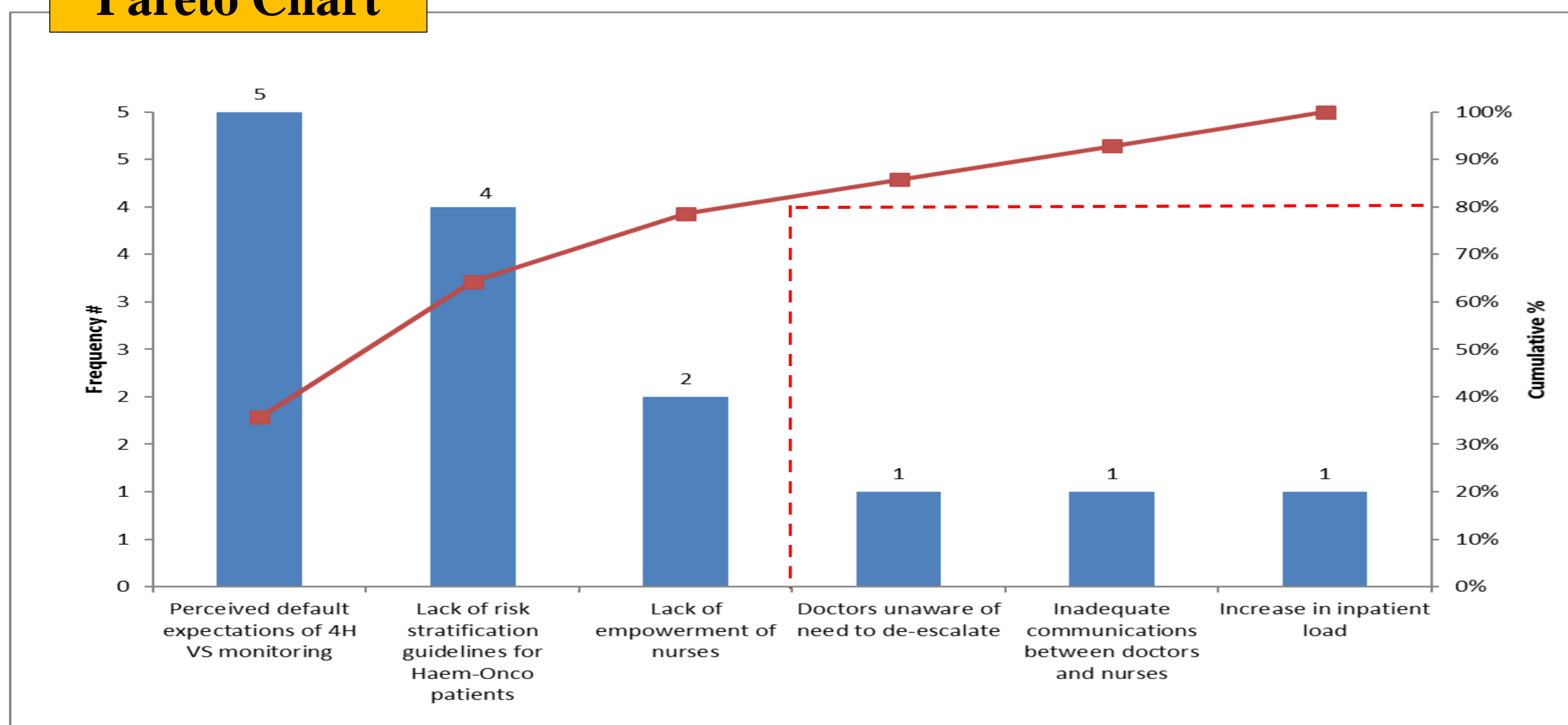
Methodology

- A Quality Improvement Project was carried out in 4 Haematology-Oncology inpatient wards at NCIS from March 2017 – July 2017 (pilot phase) and October 2017 - September 2018 (maintenance phase).
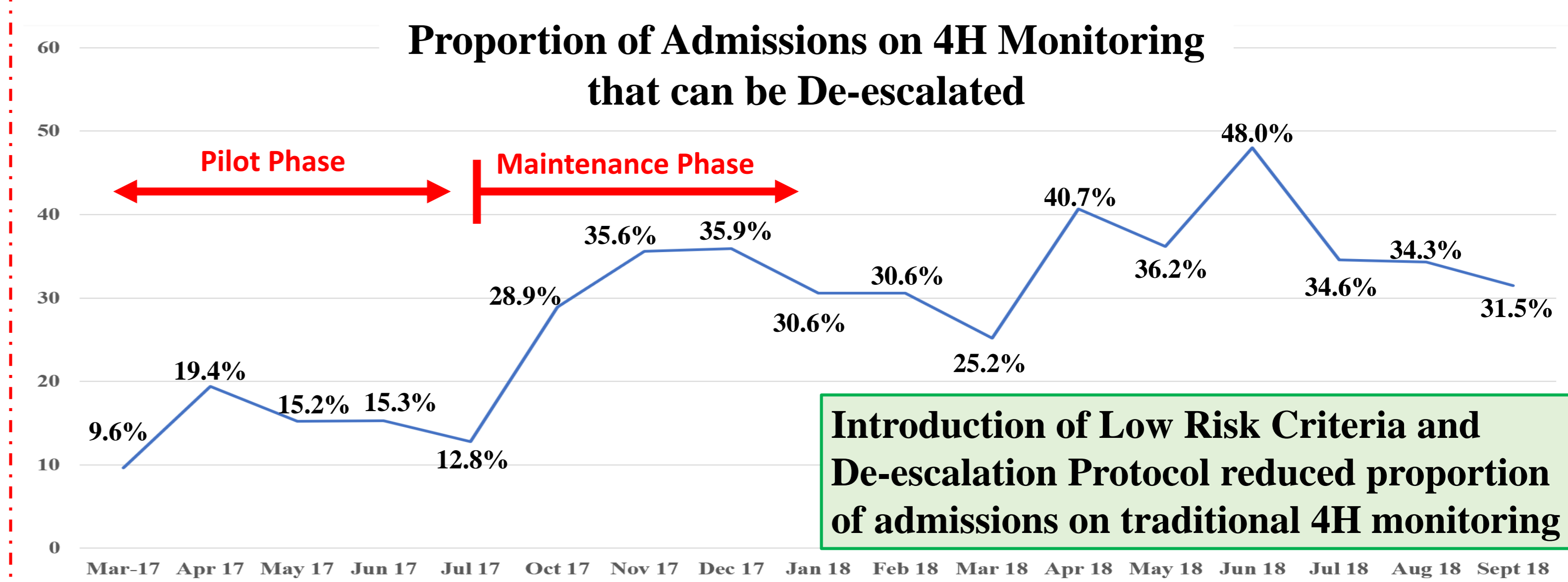
Problem Analysis

Fishbone Diagram
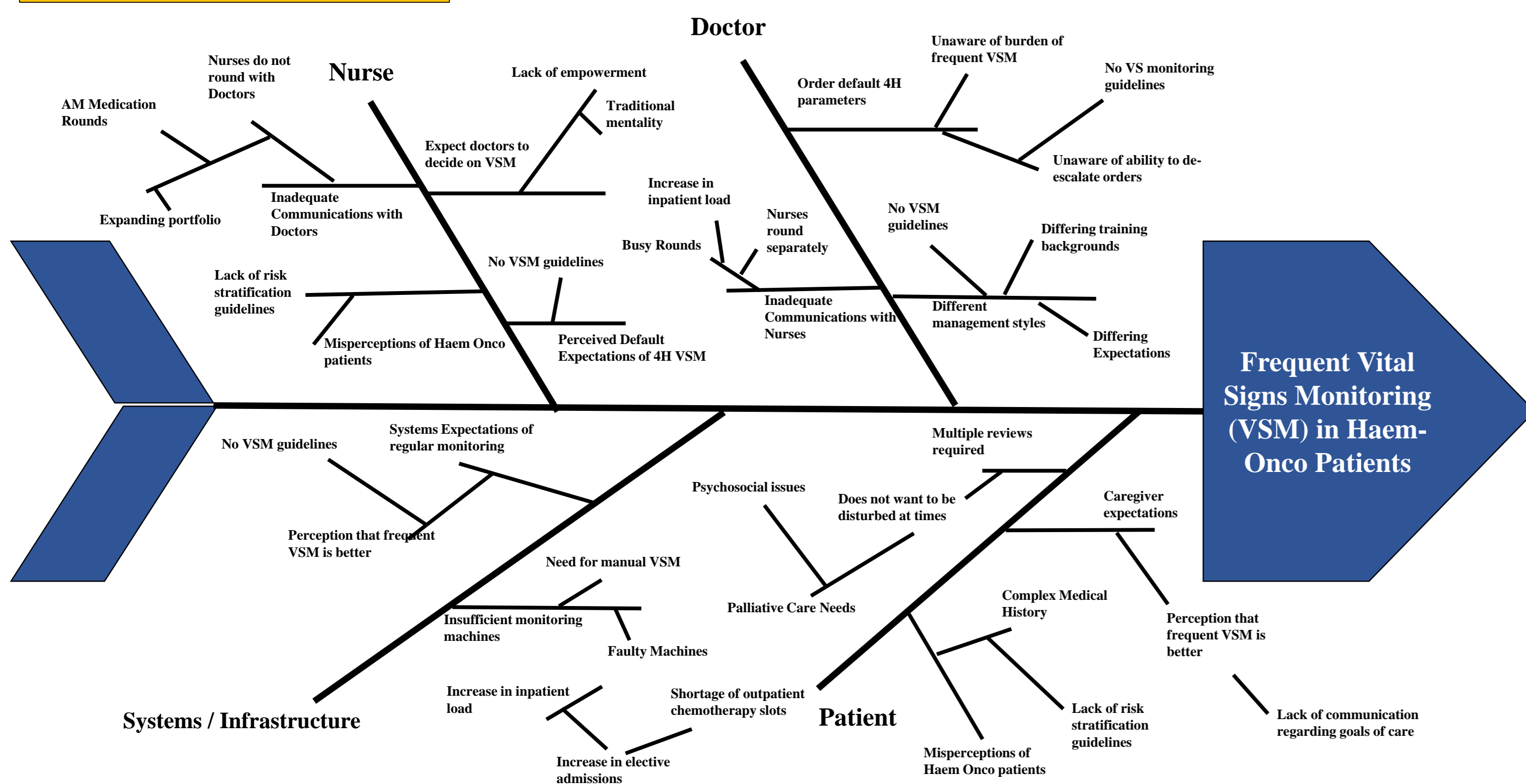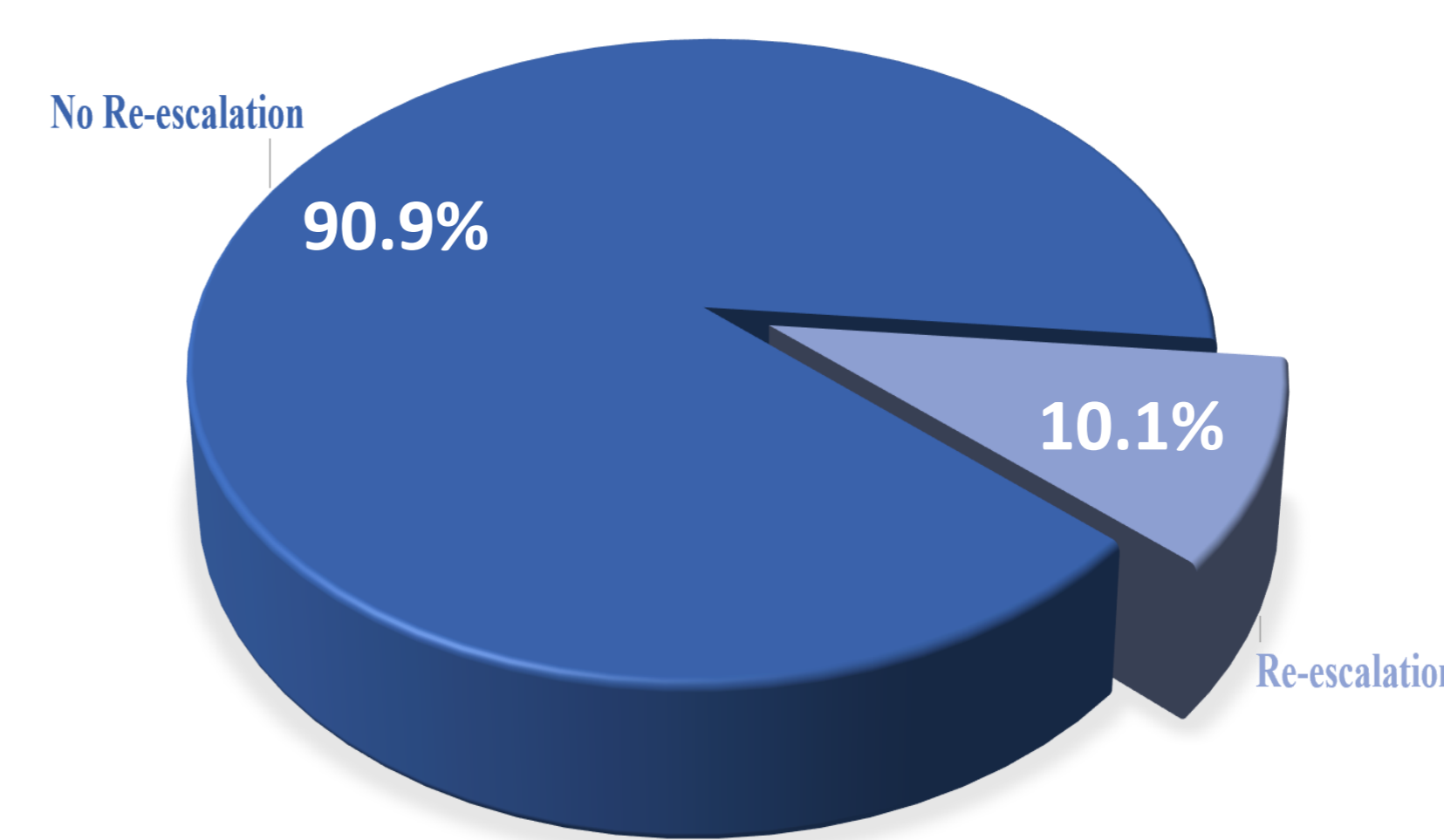

Pareto Chart

Strategy for Change

Problem	Intervention
Perceived Expectations	Consensus Criteria drawn up for Low Risk patients - Brainstorming sessions; Survey of doctors and nurses - Engaged stakeholders review of criteria
Lack of Empowerment of Nurses	Nurses engaged at Row Call / Meetings - Senior Nurses served as role model
Lack of Guidelines for VSM	De-escalation Protocol formulated for VSM de-escalation of Low Risk patients - Approved by ALL stakeholders - Training sessions conducted for ALL ward nurses
Inadequate Communications	Reminder to Nurses / Doctors to communicate regarding VSM at daily ward rounds

Measurement of Improvement / Effects

Successful / Safe De-escalation of Low Risk Patients

Proportion of Admissions on 4H Monitoring that can be De-escalated

Introduction of Low Risk Criteria and De-escalation Protocol reduced proportion of admissions on traditional 4H monitoring

Proportion of Recruited Low-Risk Patients Requiring Re-escalation

No Re-escalation 90.9%
Re-escalation 10.1%

Average of 10.1% of recruited patients required re-escalation of monitoring
- None were deemed preventable with more frequent VSM
- None resulted in unexpected death / severe deterioration
- 84.3% were initiated by nurses

50% Reduction in Measured Outcomes

Mean Nursing Encounters (NE) per Patient

p<0.01

■ 4H VSM ■ De-escalation Protocol
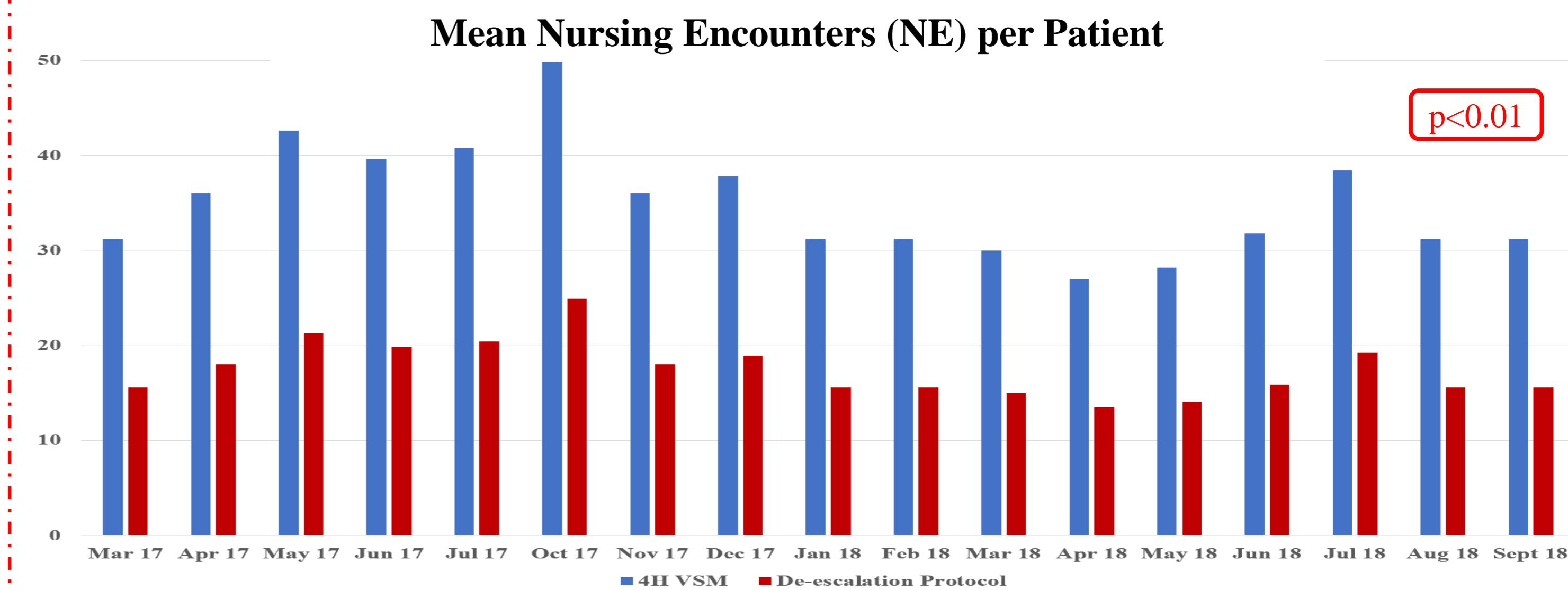
Over a 17-month intervention period involving a total of 1065 LR patients, Nurse-led VSM De-escalation resulted in MEAN MONTHLY SAVINGS of:
- 948.4 Nursing Encounters (NE)
- 2731.5 NE-minutes

Time saved was used to ENHANCE other aspects of patient care:
- Patient and Family Education
- Nurse-Patient Interaction
- Patient Safety e.g. Falls Prevention
- Ward Equipment Checks, Ward Hygiene

Sustainability

Issues during Pilot Phase
- Initial unfamiliarity with selection criteria and de-escalation protocol
- Non-uniform data capture

Rectification Measures
- Audits and one-to-one feedback by Ward Sisters
- Review of study protocol in the form of Video Tutorial during Roll Call

Recruitment of Low Risk patients increased from 15.5% (pilot phase) to 32.0% (maintenance phase)

p<0.01

15.5% Pilot Phase (Mar-Jul 17)
32.0% Maintenance Phase (Oct 17 - Sept 18)
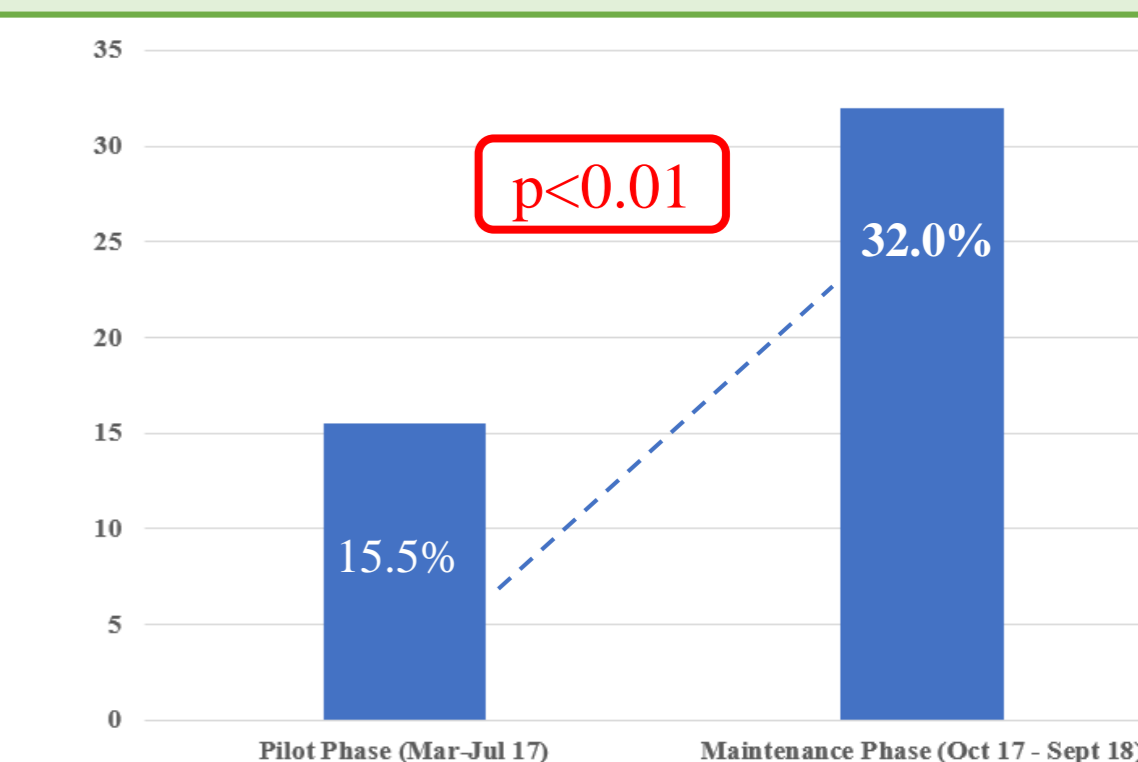
Post-Implementation Survey of 39 Doctors & 136 Nurses
- Majority (95.9%) were supportive of continuing the initiative
- Greater empowerment of nurses led to greater confidence, positive behavioural change and greater satisfaction
- No impact was perceived by medical team on patient care

Conclusion

- Low Risk Haematology-Oncology patients can be readily identified using a Consensus Criteria approved by stakeholders
- Using a well-defined protocol, Nurse-led De-escalation of VSM in Low Risk Haematology-Oncology patients is safe, does not lead to increased incidence of adverse events, and is sustainable
- Resources saved with De-escalation can be diverted to enhance patient care